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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/037,394	10/24/2001	Mark J. Pellerite	56059US009	7743

EXAMINER	
ZACHARIA, RAMSEY E	

ART UNIT	PAPER NUMBER
1773	

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3M INNOVATIVE PROPERTIES COMPANY
PO BOX 33427
ST. PAUL, MN 55133-3427

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/037,394	PELLERITE ET AL.	
	Examiner	Art Unit	
	Ramsey Zacharia	1773	

-- *The MAILING DATE of this communication appears on the cover sheet with the correspondence address* --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *22 January 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *14,15,23,24,26,27,29,30,32,33,35,36,38 and 39* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *14,15,23,24,26,27,29,30,32,33,35,36,38 and 39* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 22 January 2004 has been entered.

2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claim Rejections - 35 USC § 103

3. Claims 14, 15, 23, 24, 26, and 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Weber et al. (U.S. Patent 3,222,204) in view of Diesslin et al. (U.S. Patent 2,567,011).

Weber et al. teach glass beads that may be used in reflective coatings and films (column 1, lines 10-31). The beads are surface treated with a fluorocarbon compound to enable them to float in a binder layer such that they are about half-submerged (column 1, line 70-column 2, line 6). The glass beads have a refractive index of 1.5 and higher and a diameter of 25-1,000 μm (column 4, line 63-column 5, line 11), i.e. they are optical elements as defined by the instant

specification on lines 7-9 of page 5. The beads may be used to make reflective sheeting or highway paint (column 5, lines 10-15).

Weber et al. do not explicitly illustrate a fluorocarbon surface treatment that comprises a compound having a general formula as recited in instant claims 14 and 15. However, Weber et al. do explicitly teach (at column 7, lines 44-64) that the compound may be an oleophobic fluorocarbon sizing agent as taught by U.S. Patent 2,567,011 (i.e. Diesslin et al.).

Diesslin et al. teach a fluorocarbon compound corresponding to the formula R-Z, wherein R is a fluorocarbon radical containing at least 3 carbon atoms and Z is a monocarboxyl radical or derivative thereof, including an amide or N-substituted amide (column 1, lines 13-26). In one embodiment, R is C_3F_7- and Z is -$CONH_2$ an organic amide group (column 6, lines 5-25).

Weber et al. teach that the disclosed oleophobic fluorocarbon sizing agents are known in the art as equivalent surface treating compounds for the glass beads. Therefore, because these agents were art-recognized equivalents at the time the invention was made, one of ordinary skill in the art would have found it obvious to use the fluorocarbon compound of Diesslin et al. as the surface treating material.

Therefore, the inventions of claims 14, 15, 23, 24, 26, and 27 would have been obvious to one of ordinary skill in the art at the time the inventions were made.

4. Claims 14, 15, 29, 30, 32, and 33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Belisle et al. (U.S. Patent 4,725,494) in view of Weber et al. (U.S. Patent 3,222,204) and Diesslin et al. (U.S. Patent 2,567,011).

Belisle et al. teach a retroreflective sheet comprising transparent microspheres partially embedded in a polymeric layer (column 2, lines 30-39). The microspheres are glass beads and have a preferred diameter of 20-120 μm (column 11, lines 43-54). Because the microspheres are made out of glass and refractive index is a material property, the microspheres should intrinsically have a refractive index of about 1.5 or higher (see page 5, lines 25-28 of the instant specification). The sheet comprises a transparent top coat, a bond layer adhered to the top coat, the microspheres embedded in the bond layer, a spacing layer on the other side of the bond layer, and a reflective layer on the spacing layer (see FIGURE and column 3, lines 51-63). To achieve uniform and hemispherical bead sinkage the microspheres may be treated as disclosed in U.S. Patent 3,222,204 (column 11, lines 55-60).

Belisle et al. do not explicitly illustrate a fluorocarbon surface treatment that comprises a compound having a general formula as recited in instant claims 14 and 15. However, Belisle et al. do explicitly teach that the microspheres may be treated with a fluorocarbon compound according to U.S. Patent 3,222,204 (i.e. Weber et al.).

Weber et al. teach glass beads that may be used in reflective coatings and films (column 1, lines 10-31). The beads are surface treated with a fluorocarbon compound to enable them to float in a binder layer such that they are about half-submerged (column 1, line 70-column 2, line 6). Weber et al. do not explicitly illustrate a fluorocarbon surface treatment that comprises a compound having a general formula as recited in instant claims 14 and 15. However, Weber et al. do explicitly teach that the compound may be an oleophobic fluorocarbon sizing agent as taught by U.S. Patent 2,567,011 (i.e. Diesslin et al.).

Diesslin et al. teach a fluorocarbon compound corresponding to the formula R-Z, wherein R is a fluorocarbon radical containing at least 3 carbon atoms and Z is a monocarboxyl radical or derivative thereof, including an amide or N-substituted amide (column 1, lines 13-26). In one embodiment, R is C_3F_7- and Z is -$CONH_2$ an organic amide group (column 6, lines 5-25).

Weber et al. teach that the disclosed oleophobic fluorocarbon sizing agents are known in the art as equivalent surface treating compounds for the glass beads. Therefore, because these agents were art-recognized equivalents at the time the invention was made, one of ordinary skill in the art would have found it obvious to use the fluorocarbon compound of Diesslin et al. as the surface treating material. Moreover, one of ordinary skill in the art would be motivated to treat the microspheres of Belisle et al. to yield a product with uniform hemispherical sinkage of the microspheres into the bond layer.

Therefore, the inventions of claims 14, 15, 29, 30, 32, and 33 would have been obvious to one of ordinary skill in the art at the time the inventions were made.

5. Claims 14, 15, 35, 36, 38, and 39 are rejected under 35 U.S.C. 103(a) as being unpatentable over Morris et al. (U.S. Patent 6,204,971) in view of Weber et al. (U.S. Patent 3,222,204) and Diesslin et al. (U.S. Patent 2,567,011).

Morris et al. teach a rear projector screen comprising glass microspheres having a refractive index of 1.5 to 1.7 (column 2, lines65-column 3, line 10). In the embodiment of Example 1, the microspheres may have a particle size of between 35 and 150 μm. The microspheres are embedded in an opaque layer (Figure 22 and column 8, lines 35-46). Prior to embedding, the microspheres are treated with a fluorochemical compound as disclosed in U.S.

Patent 3,222,204, i.e. Weber et al. (column 10, lines 26-42). Weber et al. do not explicitly illustrate a fluorocarbon surface treatment that comprises a compound having a general formula as recited in instant claims 14 and 15. However, Weber et al. do explicitly teach that the compound may be an oleophobic fluorocarbon sizing agent as taught by U.S. Patent 2,567,011 (i.e. Diesslin et al.).

Diesslin et al. teach a fluorocarbon compound corresponding to the formula R-Z, wherein R is a fluorocarbon radical containing at least 3 carbon atoms and Z is a monocarboxyl radical or derivative thereof, including an amide or N-substituted amide (column 1, lines 13-26). In one embodiment, R is C_3F_7- and Z is -$CONH_2$ an organic amide group (column 6, lines 5-25).

Weber et al. teach that the disclosed oleophobic fluorocarbon sizing agents are known in the art as equivalent surface treating compounds for the glass beads. Therefore, because these agents were art-recognized equivalents at the time the invention was made, one of ordinary skill in the art would have found it obvious to use the fluorocarbon compound of Diesslin et al. as the surface treating material that is then applied to the microspheres of Morris et al.

Therefore, the inventions of claims 14, 15, 35, 36, 38, and 39 would have been obvious to one of ordinary skill in the art at the time the inventions were made.

Response to Arguments

6. Applicant's arguments filed 10 December 2003 have been fully considered but they are not persuasive.

The applicants argue that one of ordinary skill looking at Diesslin et al. and the prior art as a whole would conclude that only those fluorocarbon acid and derivatives of Diesslin et al.

having a fluorocarbon tail that projects outwardly a substantial distance would be suitable for use as a surface treatment for optical elements to induce float and not those having 1 to 4 fluorinated carbon atoms as claimed.

This is not persuasive because Diesslin et al. explicitly teaches that acyclic fluorocarbon acid and derivatives having a tail of $-C_nF_{2n+1}$ where n is 3 or higher are suitable for use as surface active agents. See column 2, lines 8-44, particularly lines 14-16 and 19-30. That is, Diesslin et al. explicitly teach that acyclic fluorocarbon acid and derivatives having a tail of $-C_nF_{2n+1}$ where n is 3 or higher (including an embodiment in which the tail is $-C_3F_7$) have fluorocarbon tails that project outwardly a substantial distance.

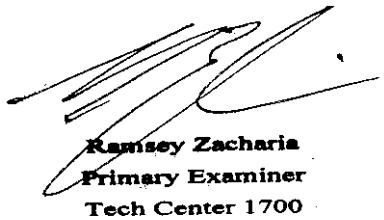
Conclusion

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ramsey Zacharia whose telephone number is (571) 272-1518. The examiner can normally be reached on Monday through Friday from 9 to 5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Paul Thibodeau, can be reached on (571) 272-1516. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR

system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Ramsey Zacharia
Primary Examiner
Tech Center 1700